

examination, with negative results, of the central nervous system in a case of cured human trypanosomiasis. A Sikh belonging to the 4th K.A.R. (aged thirty at death) was found to be suffering from trypanosomiasis in June, 1905, and received treatment with inorganic arsenic. The drug was given intermittently for eighteen months or more, and pushed until toxic symptoms of neuritis and mental dullness rendered further energetic treatment impossible; trypanosomes were then no longer obtained by puncture of the glands. Unfortunately, there is no note of lumbar puncture having been performed until a few months before death. Sir David Bruce, in December, 1908, saw this man, and stated that he appeared to be in excellent health. A year later he was seen by Captains Hamerton and Bateman, who reported no symptoms of sleeping sickness. They made a very careful investigation of the blood, both by microscopic examination and by experimental injection into monkeys; the results were negative. In June lumbar puncture was performed, and 17 c.c. of fluid withdrawn; the centrifuged fluid showed no lymphocytosis or trypanosomes; injection of the fluid into a monkey was followed by negative results. The patient was attacked with pneumonia in August, and died three days after admission to the hospital. *Post mortem* the brain was found quite normal in appearance, and there was no excess of fluid. *Histological Examination*.—Sections were prepared of portions of the cerebrum, cerebellum, and medulla oblongata by all the methods which the author had previously adopted for the examination of sleeping-sickness cases. He found no trace of the characteristic meningeal and perivascular infiltration nor of gliosis. It may therefore be asserted that this case proves that human trypanosomiasis is curable, but it does not prove that sleeping sickness is curable, for the author contends that the diagnosis of "sleeping sickness" can only be made when there is a proof that the trypanosomes had invaded the sub-arachnoid space. The tissues were forwarded to the author by C. A. Wiggins, the acting principal medical officer of Uganda.—Miss M. P. Fitzgerald: The origin of the hydrochloric acid in the gastric tubules.—Dr. A. Harden and R. V. Norris: The fermentation of galactose by yeast and yeast juice (preliminary communication).—W. M. Thornton: The opposite electrification produced by animal and vegetable life.—R. Kirkpatrick: A remarkable pharetronid sponge from Christmas Island.

Challenger Society, October 26.—Dr. A. E. Shipley in the chair.—Mr. Earland exhibited and made remarks upon *Pilulina jeffreysii*, a rare species of Foraminifera dredged west of St. Kilda by the *Goldseeker*, which had only been recorded once since its discovery by the *Porcupine* in 1860.—Mr. Tate Regan discussed the evolution of the flat-fishes, which he regarded as asymmetrical perches; from some form not unlike Psettodes, indifferently dextral or sinistral, had arisen two well-marked groups, and each of these had split into two series, a sinistral and a dextral. Parker's researches on the optic nerves had made it clear that reversal to the asymmetry of opposite sign was secondary in the Pleuronectidae.

PARIS.

Academy of Sciences, October 31—M. Emile Picard in the chair.—The president announced the loss by death of M. Gernez.—Henri Douville: Some cases of adaptation. The origin of man. A discussion of some modifications produced in various species by change in the conditions of life, including changes which may possibly have been produced in the anthropoid apes by lower temperature, reduced rainfall, and consequent destruction of forests.—M. Coggia: Observations of the new Cerulli planet (KU) 1910, made at the Observatory of Marseilles with the Eichen's equatorial of 26 cm. aperture. Observations are given for October 21 and 22, and also the positions of the comparison star.—H. Larose: The extinction of the discontinuities by reflection at the extremities of a telegraphic line. In a previous paper the expressions for the potential and current on a telegraphic line of indefinite length were given; the case of a line of limited length is worked out in the present communication.—G. A. Hemsalech: The influence of the magnetic field on the duration of the lines of the spectrum emitted by luminous vapours in the electric spark. In a magnetic field the

durations of nearly all the lines are diminished, and the intensity of the action on the different lines appears to be selective. Nearly all the lines diminish in intensity except in the immediate neighbourhood of the electrode.—Georges Claude: The preparation of argon. Compressed oxygen prepared by the fractional distillation of liquid air is now an article of commerce. If the proportion of oxygen is more than 95 per cent., as is always the case in practice, the chief impurity is argon, the volatility of which is intermediate between that of oxygen and that of nitrogen. Since the oxygen is very readily absorbed, such a mixture forms an advantageous starting point for the preparation of argon.—L. Gay: The osmotic equilibrium of two fluid phases.—M. David: A method of analysis of fatty bodies by the separation of the solid fatty acids from the liquid acids. This method is based on the fact that, at a temperature of 13° to 14° C., the ammoniacal salts of the solid fatty acids are absolutely insoluble in a large excess of ammonia, whilst the ammoniacal salts of the liquid acids are completely soluble. Results are given of the application of the method to the separation of stearic or palmitic acid from oleic acid.—G. Darzens and H. Rost: The synthesis of ketones in the tetrahydro-aromatic series. Cyclohexene is treated with an acyl chloride in presence of aluminium chloride, and the product of the reaction heated with an excess of diethyl-aniline. The physical properties of four ketones prepared by this method are described.—Em. Bourquelot and M. Bridel: A new sugar, verbascone, extracted from the root of *Verbascum Thapsus*. The mode of extraction employed is given in detail. The new sugar is analogous to stachyose, of which it would appear to be an isomer and from which it differs by its higher melting point and its greater rotatory power; it gives levulose, glucose, and galactose on hydrolysis.—G. Friedel and F. Grandjean: Liquids with focal conics. Liquids of the group of ethyl azoxybenzoate are characterised by the existence of groups of focal conics in their mass or at their surface.—P. A. Dangeard: Two lower organisms met with in the Roscoff laboratory.—A. Imbert: The influence exerted by pain on the form of ergographic diagrams of fatigue.—H. Truc and C. Fleig: The experimental and chemical ocular action of bitumen dust and vapour. Bitumen dust can rapidly produce various lesions of the eye in man. The condition of the eye before exposure is an important predisposing cause, and the action of sunlight is also prejudicial. The lesions resulting from the action of bitumen vapour upon the eye are comparatively slight.—M. Urbain, Cl. Scal, and A. Feige: The sterilisation of water on the large scale by ultra-violet light. The water is caused to circulate spirally round a source of light in such a manner that with a flow of 20 cubic metres per hour the water is exposed for three minutes to the rays. With this device complete sterilisation of water has been obtained with an expenditure of twenty watts per cubic metre.—Ch. Gravier: The duration of life in the Madrapores.—Henry Péneau: The cytology of *Endomices albicans*.—Y. Deprat: The geographical distribution of the different layers recognised in Yun-nan (Geological expedition, 1909-10).—Julius Schuster: The geological age of the Pithecanthropus of the pluvial period in Java. From a study of the fossil plants collected from the Quaternary deposits of Lasem, Java, the author is able to confirm his earlier estimate of the age of Pithecanthropus. If with Penck the age of *Homo heidelbergensis* be taken as 300,000 years, Pithecanthropus lived at least 400,000 years ago.—Louis Gentil: Geological sketch of the massif of Kbdana (Eastern Morocco).—E. A. Martel: The chasms of the Pyrenees. A short description of seven groups of subterranean fissures, eighty-four in all, together with a discussion of their effect on the water supply of the district.

DIARY OF SOCIETIES.

THURSDAY, NOVEMBER 10.

ROYAL SOCIETY, at 4.30.—The Tidal Observations of the British Antarctic Expedition, 1907: Sir George Darwin, K.C.B., F.R.S.—Conduction of Heat through Rarefied Gases: F. Soddy, F.R.S., and A. J. Berry.—The Chemical Physics involved in the Precipitation of Free Carbon from the Alloys of the Iron Carbon System: W. H. Hatfield.—A Spectroscopic Investigation of the Nature of the Carriers of Positive Electricity from

heated Aluminium Phosphate: Dr. F. Horton.—On the Determination of the Tension of a recently-formed Water surface: N. Bohr.—Aërial Plane Waves of Finite Amplitude: Lord Rayleigh, O.M., F.R.S.—Observations on the Anomalous Behaviour of Delicate Balances, and an Account of Devices for increasing Accuracy in Weighings: I. J. Manley.—On the Improbability of a Random Distribution of the Stars in Space: Prof. F. W. Dyson, F.R.S.—The Conditions necessary for Discontinuous Motion in Gases: G. I. Taylor.—(1) On the Radium Content of Basalt; (2) Measurements of the Rate at which Helium is produced in Thorianite and Pitch-blende, with a Minimum Estimate of their Antiquity: The Hon. R. J. Strutt, F.R.S.

MATHEMATICAL SOCIETY, at 5.30.—Annual General Meeting.—The Relation of Mathematics to Experimental Science (Presidential Address): Sir W. D. Niven.—Properties of Logarithmico-exponential Functions: G. H. Hardy.—The Double Six of Lines: G. T. Bennett.—On Semi-integrals and Oscillating Successions of Functions: Dr. W. H. Young.—On the Existence of a Differential Coefficient: Dr. W. H. Young and Mrs. Young.—The Analytical Extension of Riemann's Zeta-function: F. Tavan.—The Geometrical Representation of non-real Points in space of Two and Three Dimensions: T. W. Chaundy.—The Extension of Tauber's Theorem: J. E. Littlewood.—A Note on the Property of being a Differential Coefficient: Dr. W. H. Young.—The Stability of Rotating Shafts: F. B. Pidduck.—A Class of Orthogonal Surfaces: J. E. Campbell.—On Non-integral Orders of Summability of Series and Integrals: S. Chapman.—Optical Geometry of Motion: A. A. Robb.—Lineo-linear Transformations, specially in Two Variables: Dr. A. R. Forsyth.—On the Conditions that a Trigonometrical Series should have the Fourier Form: Dr. W. H. Young.—Notes on Terminating Hypergeometric Series: Dr. W. F. Sheppard.—The Transformation of a particular type of Electromagnetic Field and its Physical Interpretation: H. Bateman.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Inaugural Address of the President: S. Z. de Ferranti.

SOCIETY OF DYERS AND COLOURISTS, at 8.—A Comparison between the Action of Dyeing, Tanning, and Vulcanisation: W. P. Dreaper.

FRIDAY, NOVEMBER 11.

ROYAL ASTRONOMICAL SOCIETY, at 5.—On the Formulæ for comparison of Observed Phenomena of Jupiter's Satellites with Theory: W. de Sitter.—Photographs of Halley's Comet taken with the Astrographic Telescope at the Cordoba Observatory: C. D. Perrine.—Third note on the number of Faint Stars with large Proper Motions: H. H. Turner.—(1) Mean Areas and Heliographic Latitudes of Sun-spots in 1907, 1908, and 1909; (2) Observations of Minor Planets in 1909; (3) Observations of Jupiter's Eighth Satellite in 1910: Royal Observatory, Greenwich.—*Probable Papers*: Preliminary Comparison with Observation of the Tables of the Four great Satellites of Jupiter: R. A. Sampson.—(1) The Systematic Motions of the Stars of Boss's "Preliminary General Catalogue"; (2) Note on a Moving Cluster of Helium Stars in Perseus: A. S. Eddington.

MALACOLOGICAL SOCIETY, at 8.—On the names used by Bolten and Da Costa for genera of Veneridae: A. J. Jukes-Browne, F.R.S.—On New Melanidae from Goram and Kei Islands, Malay Archipelago: H. B. Preston.—On the Anatomy of the British Species of the Genus *Psammobia*: H. H. Bloomer.—Note on *Triton tessellatus*: Major A. J. Peile.

PHYSICAL SOCIETY, at 8.—On the supposed Propagation of Equatorial Magnetic Disturbances with Velocities of the Order of 100 miles per second: Dr. Chree, F.R.S.—On Cusped Waves of Light and the Theory of the Rainbow: Prof. W. B. Morton.—Exhibition of a Brightness Photometer: J. S. Dow.

TUESDAY, NOVEMBER 15.

ROYAL ANTHROPOLOGICAL INSTITUTE, at 8.15.—The Castes of Eastern Bengal (Epidiastope): Sir H. H. Risley, K.C.I.E., C.S.I.

ZOOLOGICAL SOCIETY, at 8.30.—On the Inheritance of the Webfoot Character in Pigeons: J. Lewis Bonhote.—Notes on the little-known Lizard *Lacerta jacksoni* Bigr., with special reference to its Cranial Characters: Edward Degen.—On *Lacerta peloponnesiaca* Bibr.: G. A. Boulenger, F.R.S.—Remarks on Two Species of Fishes of the Genus *Gobius*, from Observations made at Roscoff: Edward G. Boulenger.

ROYAL STATISTICAL SOCIETY, at 5.—Presidential Address on a Statistical Survey of the Problems of Pauperism: Lord George Hamilton, G.C.S.I.

MINERALOGICAL SOCIETY, at 5.30.—Anniversary Meeting.—Further Notes on Wood-tin: J. H. Collins.—On the Alteration of the Felspar of Granites to China-clay: J. M. Coon.—On Wiltshireite, a new Mineral from the Binnenthal: Prof. W. J. Lewis.—A new Locality of Phenakite in Cornwall: A. Russell.

JUNIOR INSTITUTION OF ENGINEERS, at 7.30.—Presidential Address on the Influence of Pure Science in Engineering: Sir J. J. Thomson, F.R.S.

INSTITUTION OF CIVIL ENGINEERS, at 8.—Further discussion: The London County Council Holborn to Strand Improvement, and Tramway-Subway: G. W. Humphreys.

WEDNESDAY, NOVEMBER 16.

ROYAL METEOROLOGICAL SOCIETY, at 7.30.—Results of the Hourly Balloon Ascents made from Manchester, March 18th-19th, 1910: Miss Margaret White.—Registering Balloon Ascents, December 6th to 11th, 1909, and August 8th to 13th, 1910: W. H. Dines, F.R.S.—Pilot Balloon Observations in Barbados, December 6th to 11th, 1909: Charles J. P. Cave.—Report on Balloon Experiments at Blackpool: Capt. C. H. Ley.—Registering Balloon Ascents at Liverpool, June 21st to 23rd, 1910: W. Marriott.

ROYAL MICROSCOPICAL SOCIETY, at 8.—Specimens of British Mycetozoa: A. E. Hilton.

ENTOMOLOGICAL SOCIETY, at 8.

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THURSDAY, NOVEMBER 17.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: On the Effect of Gravity upon the Movements and Aggregation of *Euglena viridis* Ehrb. and other Micro-organisms: Harold Wager, F.R.S.—The Influence of Bacterial Endotoxins on Phagocytosis (including a new method for the Differentiation of Bacteria). (Second Report): L. S. Dudgeon, P. N. Panton, and H. A. F. Nilson.—On the State of Aggregation of Matter. Part I. On the Action of Salts in Heterogeneous Systems, and on the Nature of the Globulins. Part II. On the Action of Formaldehyde on Witte's Peptone. Part III. On the Solubility of Phenol and certain Crystalline Substances in Salt Solutions: Dr. S. B. Schryver.—The Proteolytic Enzyme of *Drosophila*: Miss Jean White.—A Method for Isolating and Growing the Leprosy Bacillus of Man: F. W. Twort.—The Oxidation of Phenol by certain Bacteria in Pure Culture: G. J. Fowler, E. Arden, and W. T. Lockett.

LINNEAN SOCIETY, at 8.—(1) Theoretical Origin of *Plantago maritima* and *P. alpina*, from *P. coronopus*; (2) Supplementary Observations on the Theory of Monocotyledons being derived from Aquatic Dicotyledons: Rev. George Henslow.

ROYAL GEOGRAPHICAL SOCIETY, at 5.—Research Meeting. Origin of the Present Geography of Northern Nigeria: Dr. J. D. Falconer.

FRIDAY, NOVEMBER 18.

INSTITUTION OF MECHANICAL ENGINEERS, at 8.—The Development of Road Locomotion in Recent Years: L. A. Legros.

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